

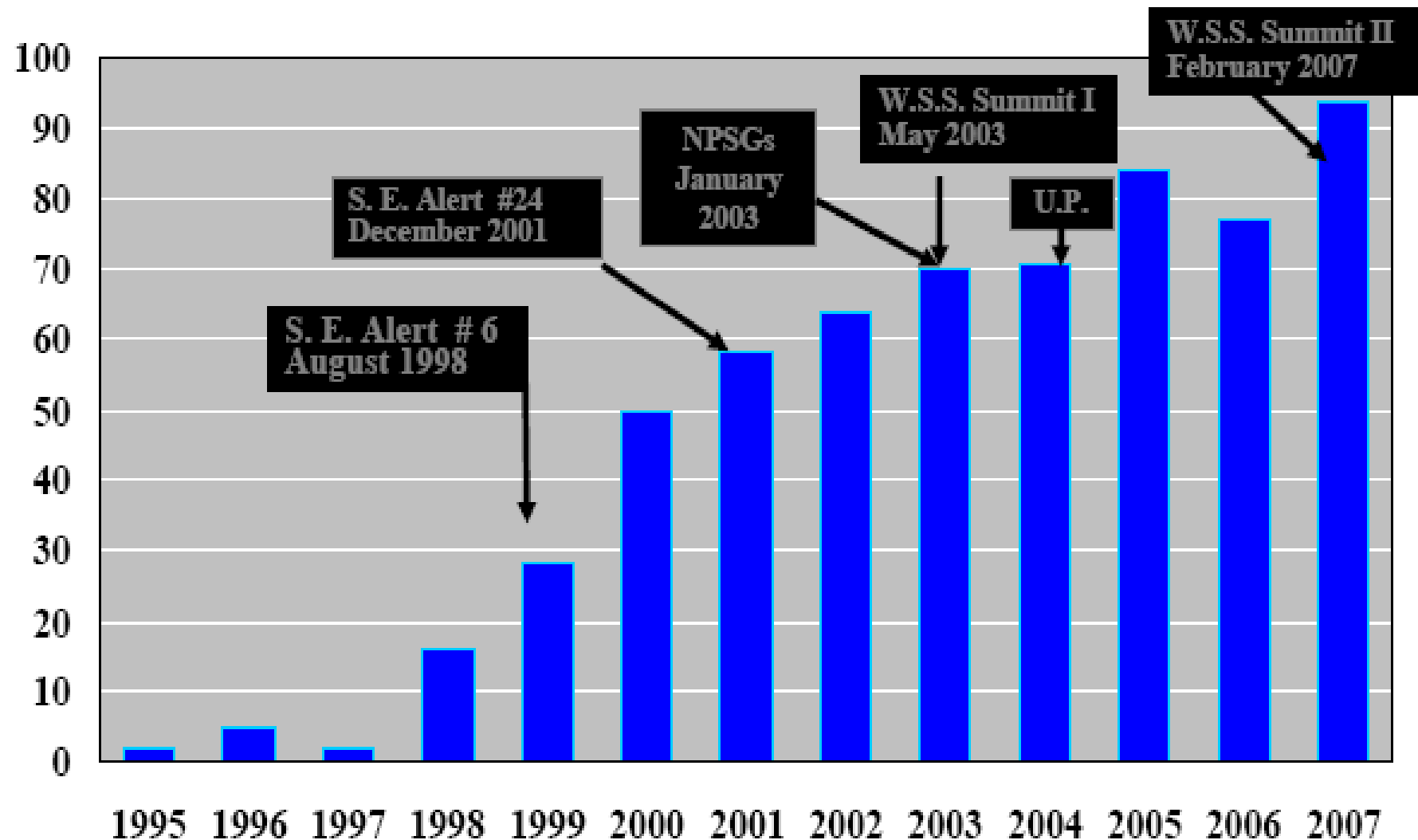
The Learning Healthcare Organization

Peter Pronovost, MD, PhD

“Safe Patients Smart Hospitals”



Wrong-site Surgeries Reviewed by Year



Please answer each question with a score of 1 to 5. 1 is below average, 3 is average and 5 is above average

- How smart am I
- How hard do I work
- How kind am I
- How tall am I
- How good is the quality of care we provide

Regulatory/External **X**

Scientifically
Sound

Open Mind

Open Will

Feasible

Open Heart

Local Wisdom/Internal

Measure

Have We Created a Safe Culture?
How Do We know We Learn
from Mistakes?

CUSP Comprehensive Unit based Safety program

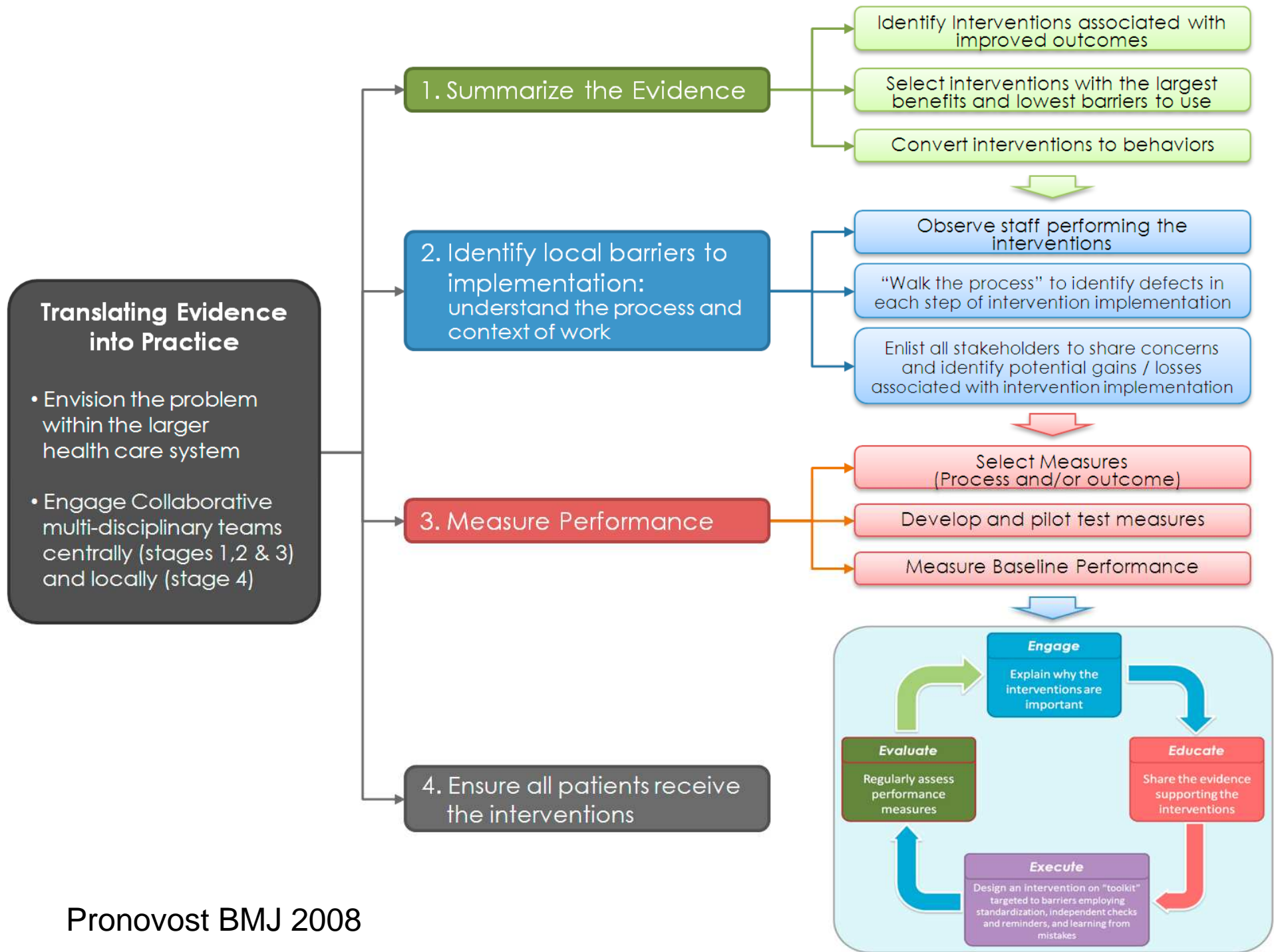
1. Educate staff on science of safety
2. Identify defects
3. Assign executive to adopt unit
4. Learn from one defect per quarter
5. Implement teamwork tools

How Often Do we Harm?
Are Patients Receiving
Recommended Therapies?

(TRiP) Translating Evidence Into Practice

1. Summarize the evidence in a checklist
2. Identify local barriers to implementation
3. Measure performance
4. Ensure all patients get the evidence

IMPROVE



Comprehensive Unit-based Safety Program (CUSP)

An Intervention to Learn from Mistakes and Improve Safety Culture

1. Educate staff on science of safety
<http://www.safercare.net>
2. Identify defects
3. Assign executive to adopt unit
4. Learn from one defect per quarter
5. Implement teamwork tools

Pronovost J, *Patient Safety*, 2005

Learning from Mistakes

- What happened?
- Why did it happen (system lenses)
- What could you do to reduce risk
- How to you know risk was reduced
 - Create policy / process / procedure
 - Ensure staff know policy
 - Evaluate if policy is used correctly

Pronovost 2005 JCJQI

Teamwork Tools

- Call list
- Daily Goals
- AM briefing
- Shadowing
- Culture check up
- TEAMSTepps

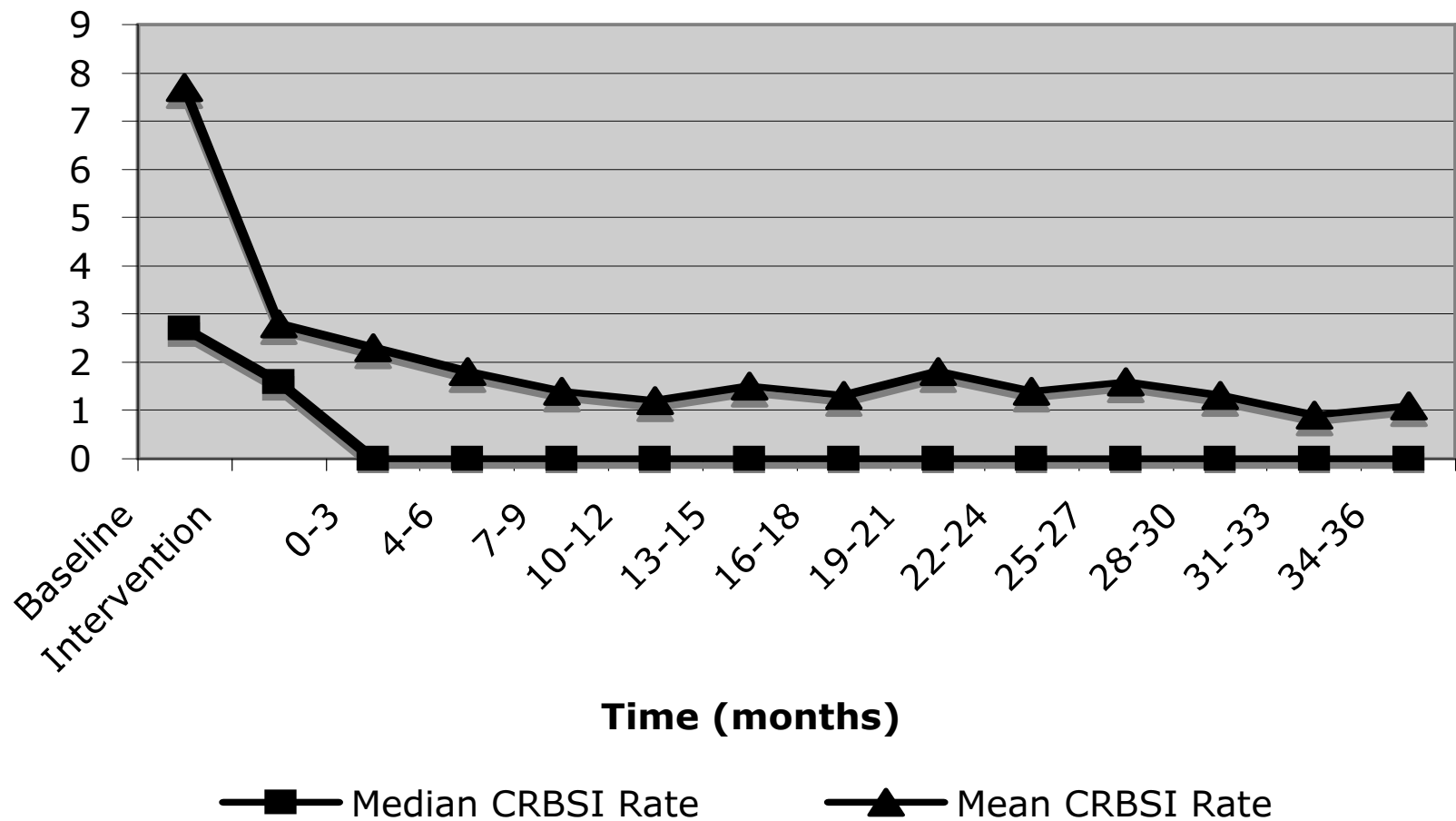
Pronovost JCC, JCJQI

CRBSI Rate Summary Data

Study Period	No. of ICUs	No. of In fections	Cathete r Days	Infection Rate		IRR (95 % CI)
		Median (Q1, Q3)	Median (Q1, Q3)	Median (Q1, Q3)	Mean (SD)	
Base line	55	2 (1, 3)	551 (220 , 1091)	2.7 (0.6, 4.8)	7.7 (2 8.9)	Re fere nce
Dur ing Implementation	96	1 (0, 2)	447 (237 , 710)	1.6 (0, 4.4)	2.8 (4.0)	0.81 (0.61 , 1.0 8)
After Implementation						
Initia l Eva luati on Period						
0-3 mo	95	0 (0, 2)	436 (246 , 771)	0 (0 , 3.0)	2.3 (4.0)	0.68 (0.53 , 0.8 8)
4-6 mo	95	0 (0, 1)	460 (228 , 743)	0 (0 , 2.7)	1.8 (3.2)	0.62 (0.42 , 0.9 0)
7-9 mo	96	0 (0, 1)	467 (252 , 725)	0 (0 , 2.0)	1.4 (2.8)	0.52 (0.38 , 0.7 1)
10-12 mo	95	0 (0, 1)	431 (249 , 743)	0 (0 , 2.1)	1.2 (1.9)	0.48 (0.33 , 0.7 0)
13-15 mo	95	0 (0, 1)	404 (158 , 695)	0 (0 , 1.9)	1.5 (4.0)	0.48 (0.31 , 0.7 6)
16-18 mo	95	0 (0, 1)	367 (177 , 682)	0 (0 , 2.4)	1.3 (2.4)	0.38 (0.26 , 0.5 6)
Sustainabi lity Period						
19-21 mo	89	0 (0, 1)	399 (230 , 680)	0 (0 , 1.4)	1.8 (5.2)	0.34 (0.23 , 0.5 0)
22-24 mo	89	0 (0, 1)	450 (254 , 817)	0 (0 , 1.6)	1.4 (3.5)	0.33 (0.23 , 0.4 8)
25-27 mo	88	0 (0, 1)	481 (266 , 769)	0 (0 , 2.1)	1.6 (3.9)	0.44 (0.34 , 0.5 7)
28-30 mo	90	0 (0, 1)	479 (253 , 846)	0 (0 , 1.6)	1.3 (3.7)	0.40 (0.30 , 0.5 3)
31-33 mo	88	0 (0, 1)	495 (265 , 779)	0 (0 , 1.1)	0.9 (1.9)	0.31 (0.21 , 0.4 5)
34-36 mo	85	0 (0, 1)	456 (235 , 787)	0 (0 , 1.2)	1.1 (2.7)	0.34 (0.24 , 0.4 8)

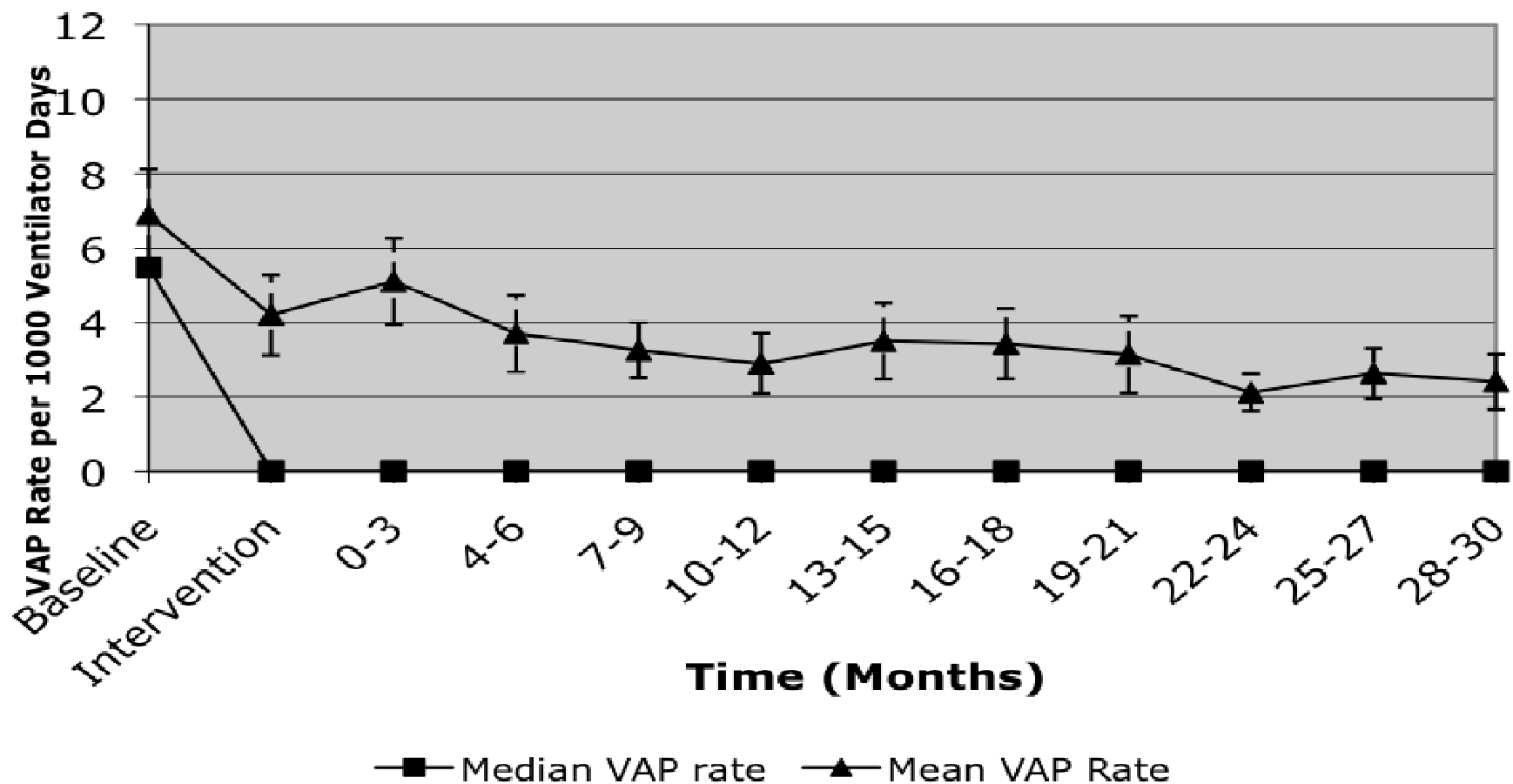
CRBSI Rate Over Time

Median and Mean CRBSI Rate



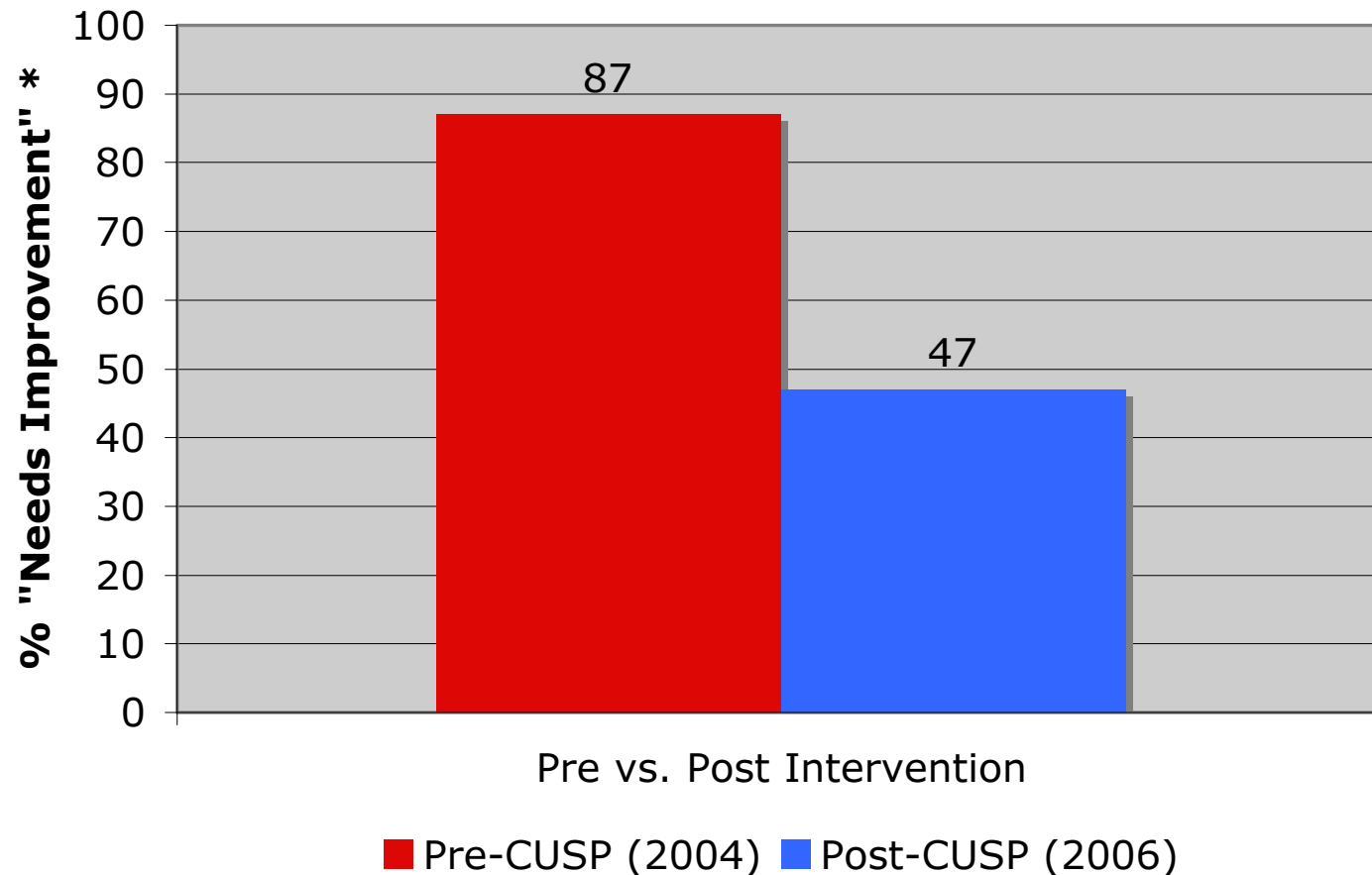
VAP Rate Over Time

Median and Mean Quarterly VAP Rate



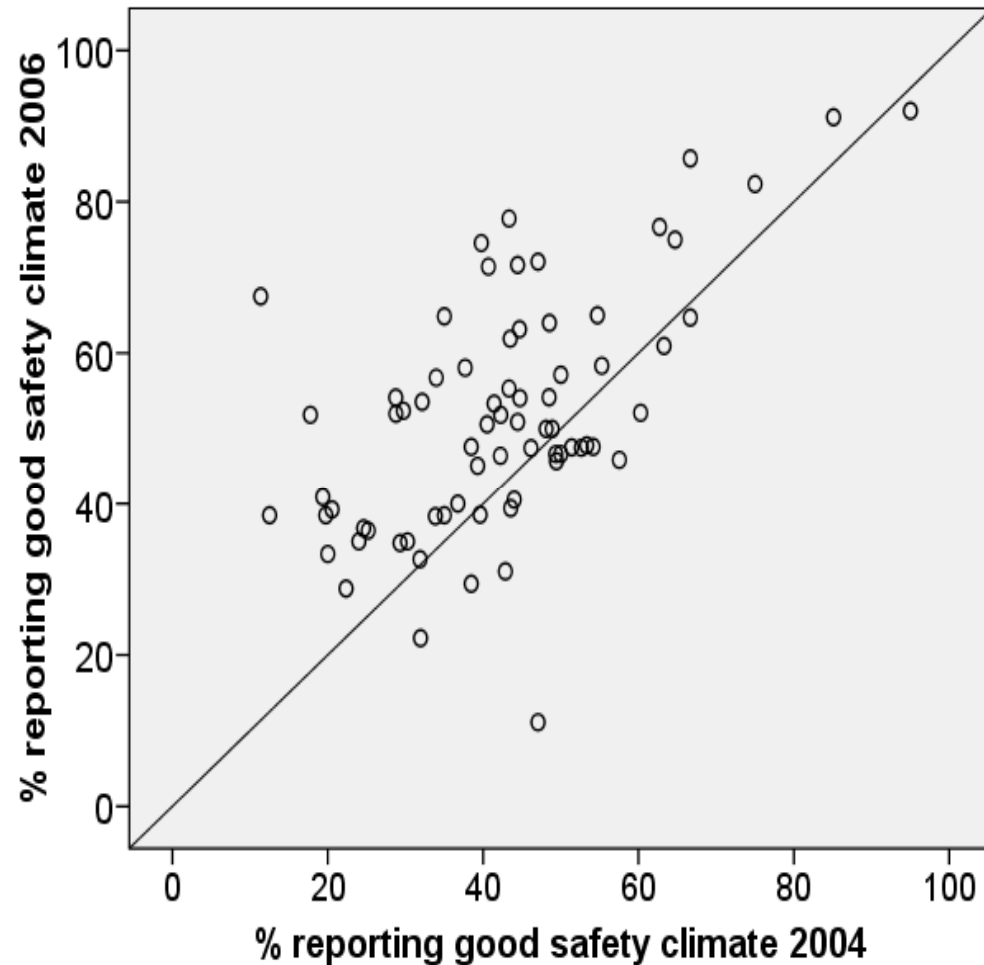
Michigan ICU Safety Climate Improvement

Effect of CUSP on Safety Climate



* "Needs Improvement" - Safety Climate Score <60%

Michigan ICU Safety Climate Score Distributions



Safety Score Card

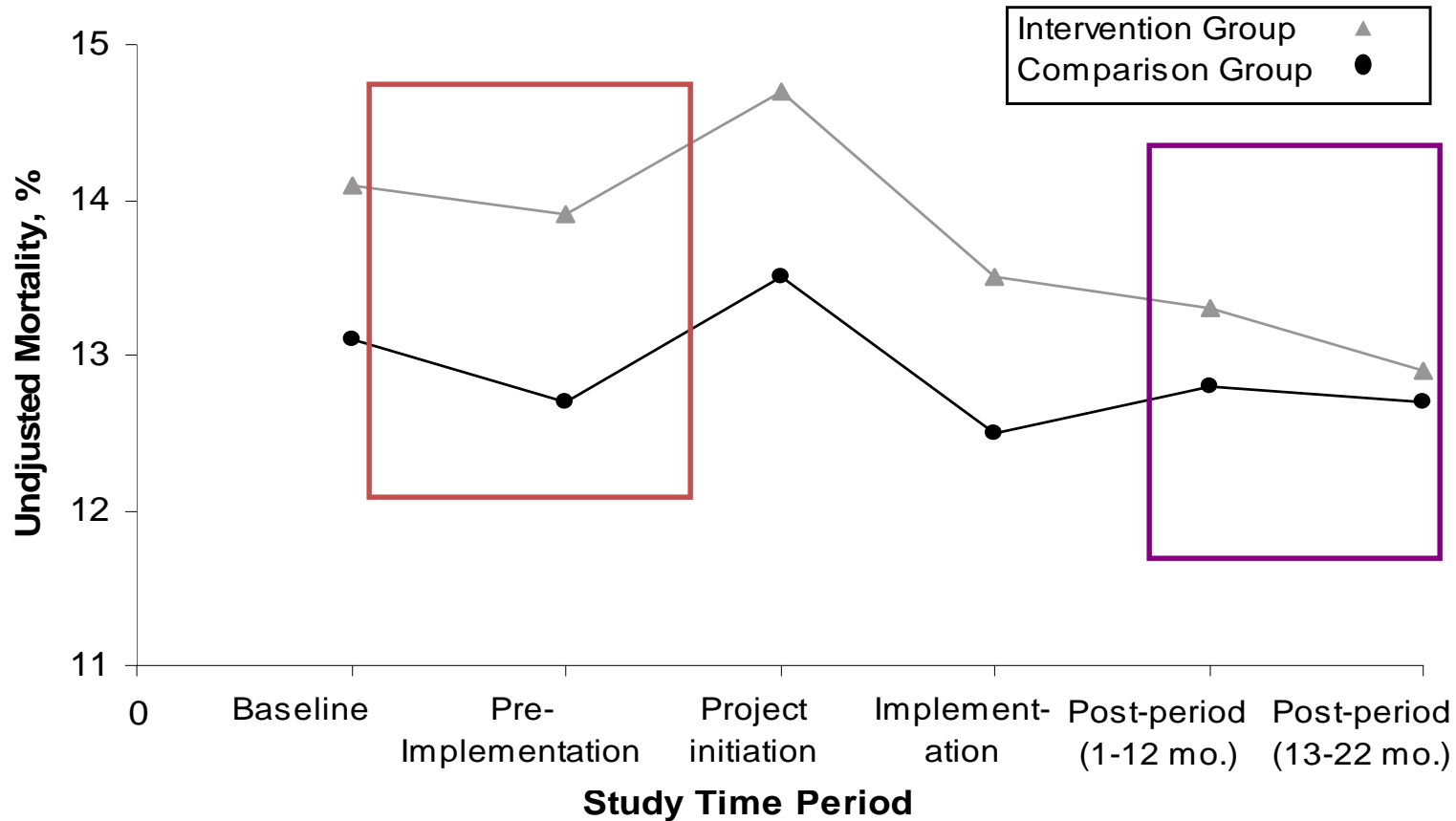
Keystone ICU Safety Dashboard

	2004	2006
How often did we harm (BSI)	2.8/1000	0
How often do we do what we should	66%	95%
How often did we learn from mistakes*	100s	100s
Have we created a safe culture		
% Needs improvement in		
Safety climate	84%	43%
Teamwork climate*	82%	42%

CUSP is intervention to improve these

Results

Unadjusted Mortality



Adjusted Hospital Mortality

(Compared to Baseline)

	Intervention Group		Comparison Group		Intervention vs. Comparison Groups
	Adjusted Odds Ratio	P Value	Adjusted Odds Ratio	P Value	P Value
Implementation	0.923	0.001*	0.929	<.001*	0.846
1-12 Months Post-implementation	0.883	<.001*	0.926	<.001*	0.138
13-22 Months Post-implementation	0.835	<.001*	0.909	<.001*	0.038*

*Significant at the $P < 0.05$ level

- Estimated annual net savings is 950 lives (based on Michigan Medicare ICU population size of 46,000)

Teamwork Climate

Overall Score for JHH

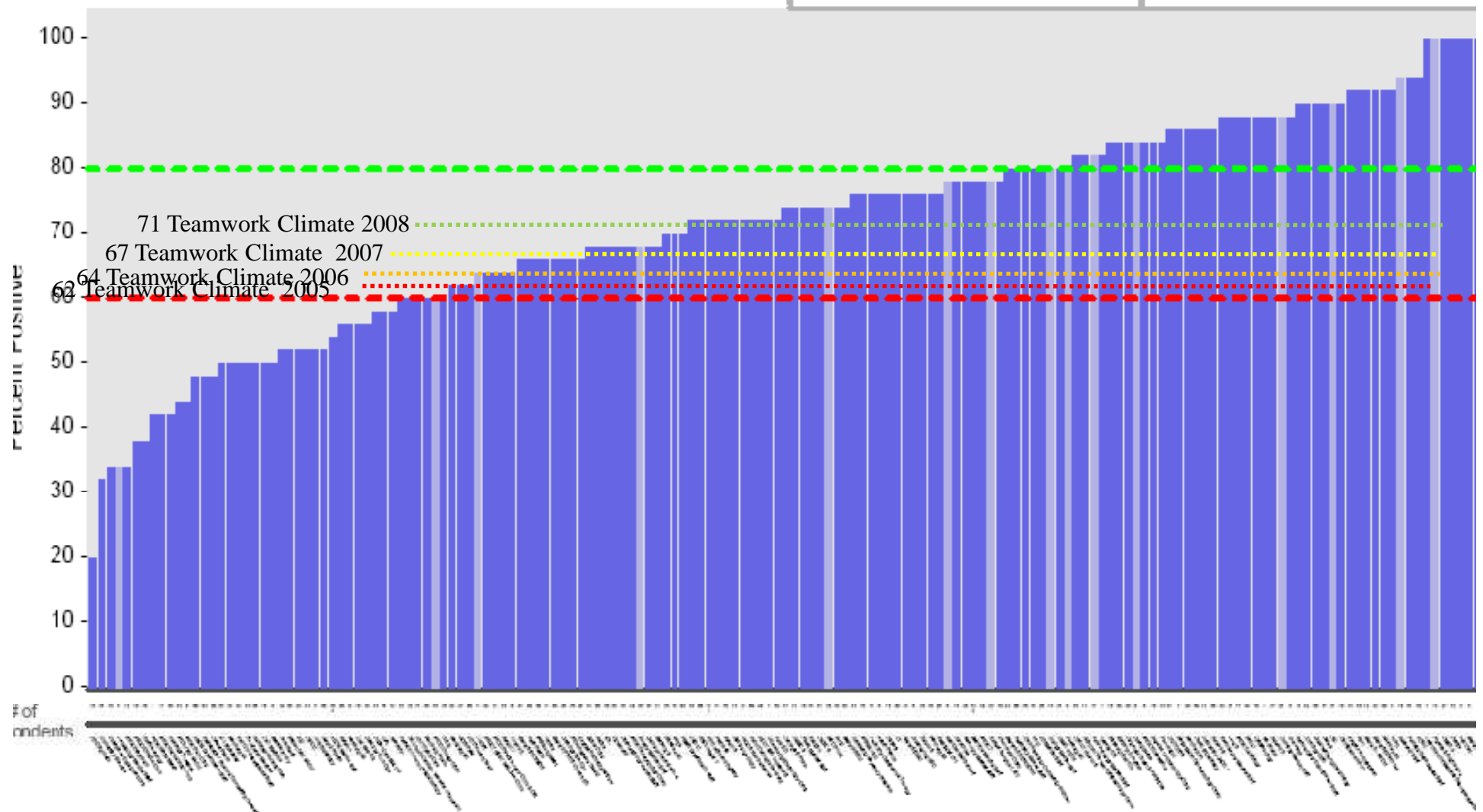
71

Compare Overall Score To

75th Percentile: 63

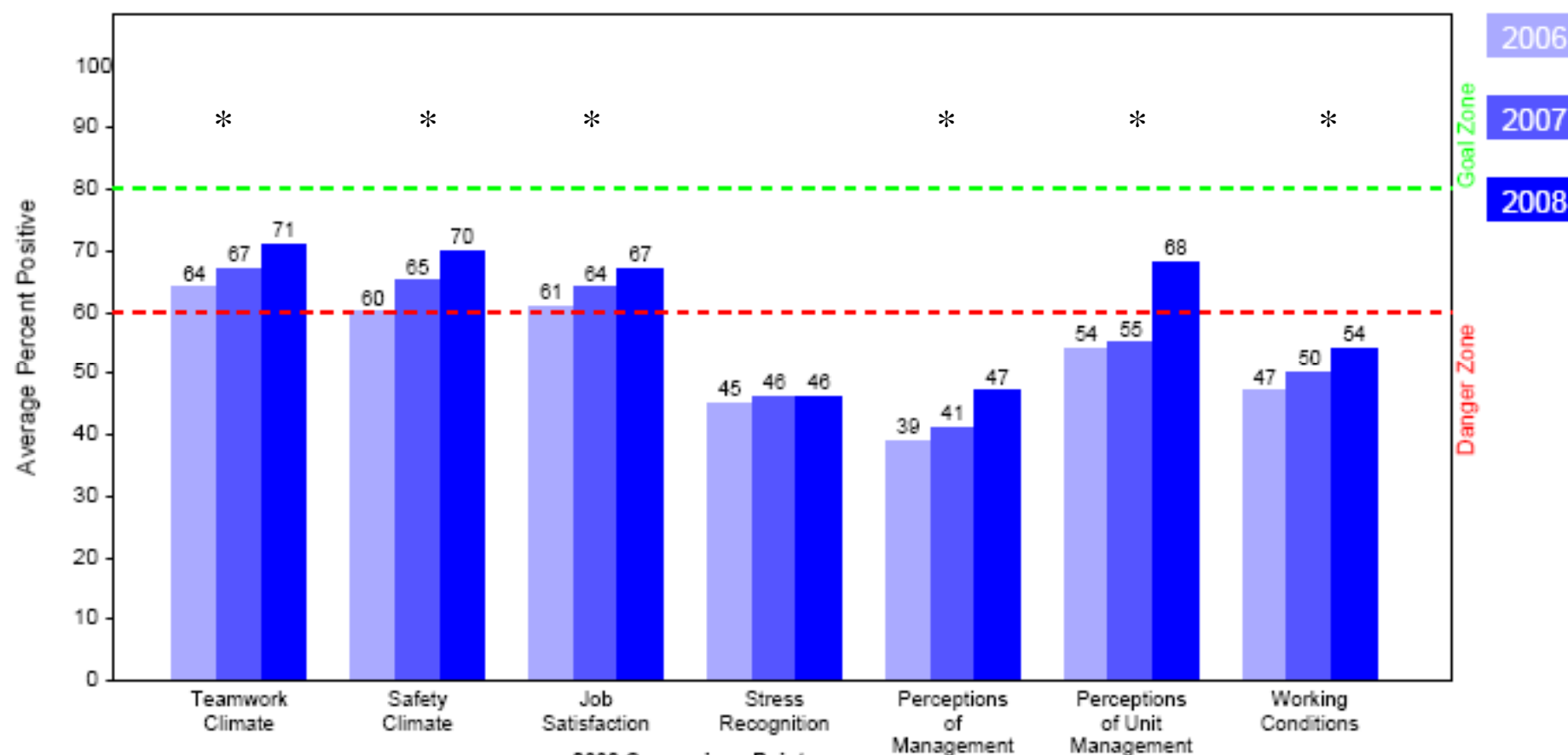
50th Percentile: 63

25th Percentile: 61



How Healthy Is Our Culture?

Safety Attitudes Questionnaire Domain Scores



2008 Comparison Points

	Mean	SD	10th%	25th%	50th%	75th%	90th%
Teamwork Climate	65	5	0	61	63	63	71
Safety Climate	66	5	0	58	69	69	70
Job Satisfaction	64	2	0	62	64	64	67
Stress Recognition	50	4	0	46	50	50	55
Perceptions of Management	44	7	0	34	47	47	51
Perceptions of Unit Management	63	5	0	57	57	68	68
Working Conditions	48	6	0	40	51	51	54

* Statistically Significant

Leading Change

- Technical Work
 - Work for which there is known science
 - Evidence and Measures
- Adaptive work
 - Work for which there is no science
 - Requires changes in values attitudes belief
- Need to get both technical and adaptive work right
- Adaptive work is usually why programs falter

Strategies for Adaptive Work

- Clarify what hill you will climb and invite others to determine how to climb it
- Surface real and perceived loss- the flip
- Create Containing Vessel to communicate- monsters in the bathroom
- Tune into WIFM- Pepperoni Pizza
- Keep the temp pressure in the pressure cooker just right: not too hot and not too cold
- Have authentic conversations, value the dissenter

Heifetz: Leadership Without Easy Answers


Focus and Execute





Now is the Time

- To eliminate CLABSI in DOD
- To set measurable goals and implement CUSP
- To create healthcare CAST
- To build teamwork competencies into training and certification
- To hold clinicians accountable
- To develop robust peer to peer review (WANO)
- To help create open minds, open hearts and open will



Never doubt that a small group of
thoughtful committed people can
change the world, indeed, it is the
only thing that ever has

Margaret Meade

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